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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,033	06/23/2005	Jerome Ditter	440959/PALL	4631
23548	7590	01/12/2006	EXAMINER	
LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			FORTUNA, ANA M	
			ART UNIT	PAPER NUMBER
			1723	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/510,033

Applicant(s)

DITTER ET AL.

Examiner

Ana M. Fortuna

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/10/0410/28/05</u>   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-16, 21, 22, 23, 24, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Nohmi et al (US 4,399,035)(hereinafter Nohmi). Nohmi discloses an asymmetric hollow fiber membrane and the process of making the membrane, the pores of the membrane increase from the outer surface toward the inner surface of the membrane radially to a center portion of the membrane thickness (abstract, fig.6). As to claim 3, the membrane inherently includes a central longitudinal axis.

Regarding claim 5, formation of filter devices including the hollow fibers is also disclosed (see column 33, lines 17-37).

Regarding claim 6, making the membrane form a polymer dope including a solvent and a lumen forming agent, e.g. a non-solvent (column 17, lines 5-68, bridging column 18, lines 1-3, more particular column 17, lines 66-68, column 18, lines 1-27).

Regarding claims 7-12, the agent added to the polymer dope include the claimed properties of claims 7-12, e.g. a non-solvent agent selected as dimethyl succinate, diethyl succinate (dibasic esters), as more specifically claimed in claim 12 (see column 18, lines 28-54).

Art Unit: 1723

As to claim s 14-15, polysulfone polymers are disclosed in Nohmi (column 16, lines 51-65).

As to claim 15, the solvent is disclose (see column 17, lines 36-48).

Regarding claims 21-25, the coagulation liquid, additives, and the structure of claim 25 are also disclosed (column 19, lines 40-68, column 20, first paragraph). The addition of water to the dope, and the use of water or water alcohols mixtures as coagulation fluid or bore fluid are also disclosed (column 19, line 67, column 21, lines 57-68, column 22, lines 1-10, and column table 10, columns 33-34). Using other non-solvents (poor solvent for the polymer) as the bore fluid is also suggested (column 21, lines 57-64).

3. Claims 1-5, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Aptel et al. (US 4,882,223)(Aptel). Aptel discloses a membrane with asymmetrical structure and including pores increasing toward the inner surface (abstract, Fig.4). the filter including the membranes is also disclosed (Fig. 13-15).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nohmi et al (US 4,399,035)(hereinafter Nohmi) in view of Kraus et al.(US5,076,935)(Kraus). Nohmi, discussed above, fails to disclose the phenoxy resin addition to the polysulfone membrane.

6. Kraus teaches adding phenoxy resin of the claimed structure to polysulfone membranes, e.g to increase membrane strength (abstract, column 2, lines 7-68, see also line39-46). Using solvent mixtures, and coagulation in a non-solvent is also disclosed (column 3, lines 3-40). It would have been obvious to one skilled in the art at the time the invention was made to make a membrane including the phenoxy resin as strength increasing agent as suggested in Kraus; the final membrane configuration will be depending on the dope composition, and spinning process, e.g. coagulating solvent and bore forming fluid, which are suggested by both reference, e.g. water as coagulating fluid, e.g. non-solvents (column 4, lines 10-68, column 5, lines 1-41).

### ***Conclusion***

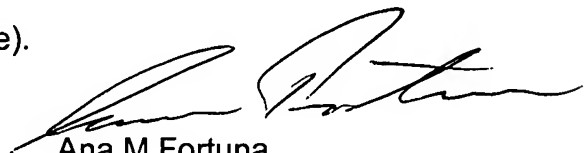
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference 5,340,480 teaches asymmetric membrane made from the polymers solvent and non-solvent as claimed , with the skin at the inner side. Additional references teach asymmetric polysulfone membranes with skin layer(s).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M. Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Ana M Fortuna', is positioned above the printed name.

Ana M Fortuna  
Primary Examiner  
Art Unit 1723

AF  
January 06, 2006